

REMARKS

This paper is presented in response to the non-final official action dated July 7, 2010, wherein (a) claims 1-3, 7, and 10-12 were pending, (b) claims 1-3, 7, 10, and 11 were rejected as being obvious over Patel in view of Kirckof, and (c) claim 12 was rejected being obvious over Patel in view of Kirckof and Schmidt.

By the foregoing, claims 1 and 10 are amended. Claims 1-3, 7, and 10-12 remain pending and at issue, with claims 1 and 10 being independent.

The respective obviousness rejections are respectfully traversed; reconsideration of the claims, as amended, is solicited.

In the invention, discoloring occurs according to an entirely different mechanism from that of Patel. In the invention, a product formed in a reaction between one or more compound (A) and an organic metal compound (B) discolors into a distinctly different color in a particular pH range due to a pH change caused by hydrogen peroxide and an oxidative force in plasma treatment, and a metal cation that participates in the reaction.

The official action recognizes that in Patel, the reactive species are bromine anions, whereas in the invention, the reactive species is a cation. Therefore, independent claims 1 and 10 have been amended to more clearly distinguish the reaction mechanism of the invention from that of Patel.

Patel does not disclose: "one or more compounds (A) selected from the group consisting of adsorption indicators and metal chelate-titration indicators, wherein the adsorption indicator is selected from indicators used in detection of metal ions that discolor as adsorbed on colloidal particle, and the metal chelate-titration indicator is selected from the group consisting of organic colorants having a proton that can be replaced with a metal ion in the molecule and compounds having multidentate ligands that can form a chelate compound by binding to a metal ion."

Further, in Patel, reactive species, which are anions such as a bromine anion, a chlorine anion, or the like, are generated from an activator by exposing the activator to oxidative plasma. The generated reactive species attaches to a substrate dye, and thereby a color-changeable indicator is produced, and discoloration based on the color-changeable indicator is effected according to pH, as shown at page 6, line 36 to page 7, line 11 of Patel.

Furthermore, aluminum acetylacetonate cited in Patel as a source for generating acetylacetonate anions. In contrast, in the invention, aluminum acetylacetonate is used as a source for generating aluminum cations.

The color change mechanism of Patel is also entirely different from that of the invention. Therefore, even if the same dye and aluminum chelate as the invention were to be used in Patel, a compound thereof after a color change would be entirely different from that of the invention.

Kirckof describes a sterilization indicator system that allows a sterilization cycle to be monitored without the need for a user to subjectively distinguish between color, quality, or intensity of display patterns. However, the indicator does not fall within the scope of the invention, and an organic metal compound (B) defined in the present specification and the reaction mechanism discussed above are not taught therein. Further, the concept of enhancing discoloration speed by glycol solvent in the plasma-sterilization indicator composition is also not taught in Kirckof.

Schmidt describes a thermal ink jet ink composition for textile media, which comprises a water miscible organic solvent, water, and a dye. However, a plasma-sterilization indicator itself or a plasma-sterilization indicator comprising one or more compounds (A) selected from the group consisting of adsorption indicators and metal chelate-titration indicators, an organic metal compound (B), and a polyvalent alcohol (C), as well as the reaction mechanism or the concept of enhancing discoloration speed by glycol solvent discussed above are not taught or suggested in Schmidt.

Thus, Kirckof and Schmidt neither teach nor suggest the subject matter of the invention, especially the technical features discussed above, and do not compensate for the deficiencies between the technical features of the invention and the disclosure of Patel.

Therefore, even if the teachings of Patel were considered in view of Kirckof, or in view of Kirckof and Schmidt a person skilled in the art could not have accomplished the subject matter of the invention. As a result, the invention is not obvious over the disclosure of Patel in view of Kirckof, or in view of Kirckof and Schmidt.

Accordingly, reconsideration and withdrawal of the rejections and allowance of claims 1-3, 7, and 10-12 are in order, and are solicited.

Should the examiner wish to discuss the foregoing or any matter of form in an effort to advance this application toward allowance, she is urged to telephone the undersigned at the indicated number.

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Respectfully submitted,

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